

3/19/03 - 00346

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

March 19, 2003

**SUBJECT:** Response to Comments, Draft Work Plan for Baseline Ecological Risk Assessment (Step 4) Blows Creek Sites 3, 4, 5, and 6; St. Juliens Creek Annex, Chesapeake, Virginia; October 2002

**FROM:** Bruce R. Pluta, Coordinator  
Biological Technical Assistance Group

**TO:** Todd Richardson (3HS13)  
Federal Facilities Section

Representatives of the BTAG have reviewed the subject document and offer the comments presented below.

1. Specific Comment 1 recommended that fish or biota samples be collected in Blows Creek to evaluate potential risks from mercury, particularly for piscivorous birds. The recommendation was based upon the finding of mercury in drainage ditches from Sites 4, 5, and 6 and the probability of complete migration pathways to Blows Creek. The Navy response indicates that detected mercury concentrations were relatively low ( $<1$  mg/kg) and that additional chemical analytical data are needed to further characterize the nature and extent of bioaccumulative chemicals in Blows Creek sediments before considering tissue analysis.

The 1 mg/kg criteria the Navy proposes is not a toxicologically based rationale to exclude tissue analysis.

It is widely known that an environmental fate property of mercury is for bacteria to convert mercury to methyl mercury, which is highly lipophilic and bioaccumulative. This information should be used in the problem formulation refinement of the BERA to support tissue analysis in the work plan.

2. Specific Comment 2 recommended that an objective of the Blows Creek investigation should be to characterize hydrodynamics and sediment dynamics within Blows Creek to support the conceptual model. The Navy response indicates that additional text will be added to the text in the work plan (provided as revised Section 2.3) and that the analysis of chemical and physical data currently planned for collection will be used to revise and further develop this portion of the conceptual model. In addition, the Navy will

consider the need to further characterize sediment and contaminant transport processes in the Blows Creek watershed following completion of this investigation.

The response is generally acceptable however the revised conceptual model should be used to support the proposed fieldwork. Revised Section 2.3 provides a good conceptual model for developing a work plan. In particular, the revised work plan should indicate whether subsurface sediment samples are warranted (due to deposition and burial of historical releases) in particular locations and whether migration within and out of Blows Creek requires further spatial sampling, particularly at the mouth of Blows Creek and in the Elizabeth River, as spatial coverage appears adequate within Blows Creek.

3. Specific Comment 4 recommended reducing the amount of sediment toxicity testing by collecting and reviewing analytical sediment data before choosing locations for sediment toxicity tests. Homogenized sediment could be stored short term for potential future use in the sediment toxicity tests. No response to this recommendation for a phased approach was provided.
4. Specific Comment 6 recommended reducing the number of surface water samples being analyzed for VOCs. The response indicates that two surface water samples (reduced from the original 16) will be collected adjacent to Site 19 due to potential groundwater transport. BTAG also requested an explanation of how surface water samples will support sediment toxicity testing analysis. The Navy's response indicated that surface water samples will be used to identify the potential for chemical mobilization/transport from sediment.

Surface water samples are extremely variable by nature and, due to contaminant fate properties of legacy contaminants, are not a good measure to assess contaminant transport pathways. For Site 19, field sampling should be performed to measure contaminants at the groundwater - surface water interface. Surface water results should not be used to characterize sediment transport.

5. Specific Comment 8 recommended that the bioassay evaluation include evaluation of exposure to multiple contaminants rather than a contaminant specific basis. The Navy revised Sections 4.1 and 4.2 to include a weight of evidence approach including exposure to multiple contaminants. The revised sections provide a good interpretation scheme.

Thank you for the opportunity to provide continuing support on this project. If you have any questions, please contact me at x 2380 or Simeon Hahn at x 5419.

Worldwide environmental awareness has increased dramatically in the past 30 years. The United States, in particular, has enacted several environmental laws and regulations that have been greatly influenced by a growing tendency of the public and regulatory agencies to become actively engaged in efforts to promote their own objectives. These objectives and their accompanying emerging issues, have grown to greatly influence the course of the Department of Defense (DOD) environmental program, as it has evolved from being mildly regulated with little public input to being heavily regulated with increasing public participation. This evolution has resulted in an urgent need for DOD to more effectively negotiate with regulatory agencies while dealing equitably with public participation and influence.

The purpose of this study is to develop a tool to elicit the decisionmaker's perception of cleanup situations influenced by certain objectives, and to translate that perception into a quantitative modeling approach that can be used to better manage the cleanup negotiating process. A multiple criteria approach was designed using a decision theory model to assist in the selection of negotiating strategies. The model uses numerous objectives and provides an optimal selection of negotiating technique(s) under certain environmental cleanup conditions. This research presents two new developments for managing problems encountered in DOD environmental cleanup. The first is a new procedure to help resolve the problem of environmental cleanup decisionmaking by using a modeling approach to better choose negotiating methods. The second is a new modeling technique facilitating this approach, using the Analytic Hierarchy Process (AHP) as a point of departure, then superimposing a complex calculus of negotiating methods and conditions on the AHP model. Data from Air Force, Navy, Office of the Secretary of Defense, Environmental Protection Agency, and State regulatory representatives were used in validating this approach to decisionmaking. The results of the model synthesized from AHP and superimposition of a complex calculus of negotiating methods and situational conditions indicated that, of the eight objectives, regulatory objectives exerted the most influence on the decisionmaking process, and tiered partnering is the most applicable negotiating method under the greatest number of generalized conditions.

## Section X.X – Watershed Contaminant Source Document

Sediments at Navy installations located near urban and/or industrial areas may be affected by contamination from multiple sources, both Navy and non-Navy. Because of the complex and dynamic hydrogeologic setting of many of these sites, it can be difficult to distinguish contributions from various sources. In accordance with the CNO *Policy on Sediment Site Investigation and Response Action* (CNO, 2002; see Highlight 1-1), the RPM must prepare a Watershed Contaminated Source Document (WCSD) if a sediment site is potentially affected by contamination from non-Navy sources. The purpose of the WCSD is to document the existence of both the Navy and other parties whose activities may have had or could continue to have an impact on sediments. The WCSD should generally be no more than 2 to 10 pages in length. The WCSD should include a graphical representation of a Conceptual Site Model (CSM). The WCSD should be prepared at the earliest point in the RI/FS process where sufficient data are available to support the CSM and associated interpretations and conclusions. If it is determined that a significant amount of site contamination is due to non-Navy sources, then the appropriate regulators should be informed using the WCSD, and the RPM should consult with counsel to determine the appropriate course of action. Naval Facilities Engineering Command (NAVFAC) Headquarters also should be notified.

The development of a WCSD, if determined necessary, can be helpful for numerous reasons when multiple sources could potentially contribute to the contamination observed at a sediment site.

- A WCSD can give a broad perspective of the potential origins, fate and transport, and overall influences of contaminants on a watershed and how they relate to the sediment site being investigated within that watershed to all the stakeholders.
- When conducting a Feasibility Study (FS) evaluation, a WCSD can aid in the evaluation of alternatives and the understanding of the potential for recontamination (from non-IR related Navy and/or non-Navy sources) under each alternative.
- A WCSD can assist in formulating DQOs for designing remedial investigations and/or developing a long-term monitoring plan following a remedial action (e.g., building into decision rules considerations for assessing recontamination potential from non-Navy sources).
- A WCSD can assist in efforts for prioritizing source control measures first.

There are seven basic steps to initially determining the need for (Step 1), and if necessary, proceeding to the subsequent steps (Steps 2-7) for the development of a WCSD. These steps provide a logical and general sequence for RPMs to follow in identifying the need, and if necessary, then developing a WCSD. These seven steps are shown in Highlight 1-?.

# **SEVEN STEPS TO DEVELOPING A WATERSHED CONTAMINATED SOURCE DOCUMENT (WCSD)**

## **Step 1 Determine the need for WCSD**

- Conduct Internal Discussion
  - Identify water body type (industrial vs. non-industrial) that sediment site is located in and if the Navy is the only source of potential contamination to this site.
  - Identify if other non-Navy sources could potentially contribute or have historically contributed to potential contamination at the site.
  - Identify if any potential contributions from non-Navy sources could contribute to overall risks and any potential issues regarding long-term remedial strategies for the site.
  - If after internal discussions are conducted, RPMs and management decide that other non-Navy sources could play a potential role in the assessment and/or management of a sediment site then proceed to Step 2.

## **Step 2 Literature search**

- Conduct a literature search to gather supporting information
  - Conduct online search
  - Review databases
  - Review public records
  - Review periodic journal records
- After conducting literature search if it still remains evident that other non-Navy sources could still play a potential role in the assessment and/or management of a sediment site then proceed to Step 3.

## **Step 3 Preliminary Watershed Conceptual Map**

- Develop Spatial Map
  - Plot findings from literature search on map
  - Identify all potential sources (i.e., Navy and non-Navy) on map
  - Identify potential non-Navy sources both current and historic by general source type (e.g., industrial outfall, former wood treating facility, NPL site, stormwater discharge outfall, etc.) and **NOT** by specific identity (e.g., ABC corporation industrial outfall, City of XYZ stormwater outfall, etc.).

## **Step 4 Watershed Visit**

- Conduct watershed visit to verify accuracy of spatial map (e.g., locations of outfalls, non-Navy cleanup sites, etc.)
- Confirm or deny any information that can be verified visually utilizing the previously completed literature search. For some potential historical sources (e.g., location of former industrial facility now occupied by commercial business park), visual verification based on current conditions may not be possible, but never the less should still be considered in developing a comprehensive WCSD.
- If the site visit reveals other potential sources that were not identified during the literature search, update documentation.

## **Step 5 Research record to fill data gaps**

- Utilizing information from the watershed visit, update the understanding and potential role of all possible sources.
- Conduct additional review of literature if determined necessary

### **Step 6 Develop Conceptual Site Model (pictorial)**

- Utilizing an updated map originally developed in Step 3, the RPM should develop a pictorial conceptual site model which should include:
  - Watershed Sources (all potential sources (Navy/non-Navy))
    - As mentioned in Step 3, the identification of potential non-Navy sources must be by general source type and not by specific identity
    - Watershed Sources can be color coded by type of source (e.g., Navy sources, stormwater outfalls, NPDES permitted outfalls, cleanup sites, industrial facilities)
  - Identify general hydrodynamic conditions of the water body (e.g., general flow direction, tidal movement, etc.)
  - Identify navigational channels if applicable
  - Identify general transport mechanisms indicating how contamination may enter a water body

### **Step 7 Write Watershed Contaminated Source Document**

- A general outline that can be used by RPMs in development of a WCSD is as follows:
  - Introduction
    - Overview of why a WCSD is beginning completed (e.g., required by CNO Policy)
    - Which IR site/s are included in discussion
    - Purpose (what does this mean and what it does not mean)
    - Scope of what the document covers
  - General setting
    - Operations of the installations
    - Extent of area covered by the facility (spatially)
  - Overview of Literature Search sources
    - Sources list (e.g., Navy, Public Record, regulatory data, etc.)
  - Results
    - Summarize findings of the literature search
    - Include Conceptual Site Model
  - Conclusions and Recommendations
    - Conclusions regarding results
      - For example, is there potential for non-Navy sources to contribute to overall contamination?
      - What specific sources (both Navy and non-Navy) are likely to contribute primarily to observed sediment contamination?
    - Recommendations
      - For example, how should results be taken into account when considering investigation, remediation, or long-term monitoring strategies of a sediment site?
  - References

When conducting literature searches in the development of a WCSD, information can be gathered from a variety sources, including information collected or gathered by states (e.g., State environmental or health departments), other federal agencies (e.g., EPA, NOAA, F&W, ACoE, etc.), or by the Navy itself. For example, the USEPA has databases, which allow for searches to focus on the hazardous waste sites or facilities holding water discharge permits near a Navy facility and a subject sediment site. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database, located at <http://www.epa.gov/superfund/sites/siteinfo.htm>, contains general information on hazardous waste sites across the nation and US territories including location, status, contaminants, and actions taken. The Permit Compliance System (PCS) database in Envirofacts located at [http://www.epa.gov/enviro/html/pcs/pcs\\_query\\_java.html](http://www.epa.gov/enviro/html/pcs/pcs_query_java.html) allows for searches to be conducted for facilities holding National Pollutant Discharge Elimination System (NPDES) permits. Many states also have similar databases or information on their internet sites that could further help with gathering relevant information for building a WCSD.

More information on the purpose, development procedure, effort required, and specifics on the content that should be contained within a WCSD will be forthcoming in a fact sheet being developed by CNO. RPMs can also obtain additional information on WCSDs by contacting their EFD/EFA Risk Assessment Workgroup (RAW) member or by contacting a member of RAW sediment subgroup.

## Hayes, Dawn M. (EFDLANT)

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**From:** Pohlman, Teresa, PENREN [PohlmanT@army.pentagon.mil]  
**Sent:** Thursday, April 03, 2003 10:23 AM  
**To:** Hayes, Dawn M. (EFDLANT)  
**Subject:** RE: GWU dissertation



Abstract.doc

Dawn,

I don't think you will be copying what I did, but as I did my research, I came across several reports of research done on your topic. You might do a search on dissertation abstracts, and also reports from the Air Force, Army or Navy. I believe that the Air Force Center for Environmental Excellence has done something very similar to your topic.

Good luck with your research - I will be glad to help in any way I can - it is a long journey, but well worth it! Call me if you want to talk, at 703-614-2173.

Here is a copy of the abstract for my Dissertation.

Have a great day!

Teresa

-----Original Message-----

**From:** Hayes, Dawn M. (EFDLANT) [mailto:HayesDM@efdlant.navfac.navy.mil]  
**Sent:** Monday, March 31, 2003 7:25 PM  
**To:** pohlmanT@army.pentagon.mil  
**Subject:** GWU dissertation

Teresa,

I am currently a student at GWU and starting to do my dissertation in Engineering Management,...I'm sure you remember those days. I came across your dissertation topic during my literature review. I am doing a similar topic to yours, but I'm really hoping it is not too similar. My hope is to develop a decision model to evaluate remedy alternatives at Superfund sites relative to the EPA's nine evaluating criteria. I came across several references to your dissertation, however, I wasn't able to find it online (UMI). I was wondering if you had a copy of your abstract (or dissertation) that you would be willing to send to me. I would like to make sure I am not copying your dissertation. I would really appreciate any help you could give me. If not, I can just make a trip to the Gelman Library. Thanks in advance.

PS. Very impressive bio,... I'd be thrilled to accomplish 1/3 of the things you have done in my lifetime! Did you ever happen to do a google search on your name?

v/r,  
Dawn Hayes, P.E.  
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The attached software applications are what should be showing up for you to certify for your employees. The first two pages are just standard applications for all EV employees. The last page (gold disk applications) is the applications that come with NMCI.

These are just the standard applications that everyone should have. Additional specific applications are on a case by case bases (i.e. NORM, ARCGIS, Airmate, etc.)

#### Basic UTAM Guidance

- Users must have licenses for all applications mapped to their **seats**
- Map the main applications to seats -- not the dependent **COTS**
- For example: Map FIS to a user's seat, NOT the dependent COTS **Host on Demand**  
At a minimum, map user's existing desktop applications **if** they are in the NAVFAC **Apps Portfolio**

#### NAVFAC Blue Disk

- Applications to be mapped to every NAVFAC seat (10 apps)
  - Business Management System
  - Electronic Solicitation Online
  - Employee Benefits Info System (website) (EBIS)
  - Employees Member Self Service (EMSS)
  - Facilities Team Survey
  - Imagemaster
  - Internet Navy Facility Assets Data (iNFADS)
  - Legacy Applications Migration Database
  - NEADS
  - Resumix
- Recommended applications to map to all seats (**44** apps) (review this list, and **if** you use any of these apps or anticipate a need in the future for any of these apps, then go ahead and map them now)

#### **For everyone**

- BRAC Management Information System
- Central Contractor Registration
- COMMAND PROJECT ADMINISTRATION SYSTEM (in LANTDIV Green Disk)
- Contractor Performance Assessment Reporting System
- CUSTOMER REQUEST AND EVALUATION FORM (in LANTDIV Green Disk)
- Defense Acquisition University Virtual Campus
- Defense Civilian Pay System (DCPS)
- DOD EMAIL
- DOD Legacy Program Project Tracker
- DrChecks
- ELECTRONIC PROJECT PROCUREMENT GENERATOR (in LANTDIV Green Disk)
- Facility Sustainment Model
- IA INFOSEC
- Installation Readiness Reporting Sys
- Leadership Development Initiative
- MILITARY CONSTRUCTION PROGRAMMING
- Naval Facilities Acquisition Center for Training Website with Natmis Online Registration
- NMCI Ordering Interface System
- ORACLE TRAINING ADMINISTRATOR
- PERSONNEL INFORMATION SYSTEM FOR TRAINING OPERATIONS AND LOGISTICS
- Standard Labor Data Collection and Distribution Application (in LANTDIV Green Disk)
- Wide Area Work Flow
- WORK INPUT CONTROL (in LANTDIV Green Disk)

**For Some (listed)**

- o COREDOC (EV Supervisors and Cathy Moore)
- o Distributed Plain Language Address verification System (Cathy Moore)
- o Groundwater Modeling System – DOD (Jay N, John Conway, Mark Barnes, Ed Corl)6
- o Turboprep (Cathy Moore)

**Not required for EV**

- o Architect-Engineer (A&E) Contractor Appraisal Support System
- o AUTOMATED QUALITY ASSURANCE SYSTEM FOR WINDOWS
- o Automated Travel Order System Plus
- o Aviation Facilities License Web Site
- o CBC SUPPLY MANAGEMENT INFORMATION SYSTEM
- o Community Explorer
- o CONSTRUCTION AUTOMOTIVE AND SPECIAL EQUIPMENT
- o Construction Contractor Appraisal Support System
- o Defense Utilities Energy Reporting System
- o Electronic Personnel Security Questionnaire - Subject Edition
- o Facility Accident Incident Report
- o Federal Logistics Catalog on CD
- o Integrated Pest Management Information System
- o NAVFIT 98A (incl NAVFIT 98 2.002.0021)
- o Navy Air Force Interface
- o PCSHouse
- o REGIONAL SHORE INFRASTRUCTURE PLANNING
- o

**LANTDIV Green Disk**

- Additional applications to be mapped to every LANTDIV seat (8 apps)
  - o Citrix ICA Client
  - o NEAMIS 1.0
  - o NEAMIS 2i
  - o Command Project Administration System (COMPAS)
  - o Electronic Project Procurement Generator (EPPG)
  - o Customer Request and Evaluation Form (CREF)
  - o Work Input Control (WIC)
  - o SLDCADA Web

Date Posted: 2/19/03

Gold Disk Contents		
SERVICE	SOFTWARE DESCRIPTION (MINIMUM VERSION)	VENDOR
<b>Basic</b>		
Operating System	MS Windows 2000 Build 2195 SP2/SRP*	Microsoft
Office Suite	Standard Office Automation Software Included on the Gold Disk <ul style="list-style-type: none"> <li>MS Word</li> <li>XIS Excel</li> <li>XIS PowerPoint</li> <li>XIS Access</li> </ul>	Microsoft
Email Client	MS Outlook 2000	Microsoft
Internet Browser	Internet Explorer MS 5.5 SP-2 128bit	Microsoft
Virus Protection	Norton Anti-Corp Edition v7.5	Symantec
PDF Viewer	Acrobat Reader v5.05	Adobe
Terminal Emulator - Hcs: (TN3270, VT100, X-Terminal)	Reflection 8.3.5 – Web Launch Utility	WRQ
Compression Tool	Winzip v8.1	Winzip
Collaboration Tool	Net Meeting v3.01 (4.4.3385)	Microsoft
MultiMedia	RealPlayer 8 (6.0.9.450)	RealNetworks
MultiMedia	Windows Media Player v7.01.00.3055	Microsoft
Internet Browser	Communicator 4.76	Netscape
Electronic Records Mgmt	Trim Context	Tower
<b>Plug-ins</b>		
Web Controls	MacroMedia Shockwave v 8.0	MacroMedia
Web Controls	Flash Player 5.0	MacroMedia
Web Controls	Apple Quicktime Movie and Audio Viewer v 5.0	Apple
Web Controls	IPIX v6.2.0.5	Internet Pictures
<b>Security Apps</b>		
Security	Intruder Alert v3.5	Axent
Security	ESM v5.1	Axent
<b>Agents</b>		
Software Management	Radius Client Connect v.2.1	Novadigm
Inventory, Remote control	Tivoli TMA v3.71	IBM/Tivoli
<b>Remote Connectivity (Notebooks)</b>		
Dial-up connectivity	PAL v4.3	MCI/Worldcom
VPN	VPN Client v4.1	Alcatel